AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1-2. (Canceled)

3. (Currently amended): A method of manufacturing a small rare earth permanent magnet comprising the steps of:

forming a cylindrical or disc-shaped rare earth magnet with a hole forming an inner surface, wherein the magnet has a surface to volume ratio of 2 mm^{-1} or more and a volume of 100 mm^3 or less, the forming step including a step of applying mechanical processing to a sintered Nd-Fe-B system or Pr-Fe-B system rare earth magnet block material so as to damage the surface of the magnet and to cause a magnetic characteristic $(BH)_{max}$ of the magnet to deteriorate,

inserting an electrode wire into [[a]] the hole of [[a]] the cylindrical or ~~disc-shaped~~ disc-shaped magnet,

supporting the magnet on the electrode wire in a depressurized tank,

placing the electrode wire between oppositely-disposed targets in the tank, wherein the oppositely-disposed targets are ring-shaped targets disposed concentrically with respect to the center axis of the cylindrical or disc-shaped magnet,

reverse-sputtering the magnet while the magnet is made to be electrically negative through the electrode wire.

transforming an R metal (R denotes at least one kind of rare earth elements selected from the group consisting of Y, Nd, Dy, Pr, Ho and Tb) or an alloy containing an R metal into fine particles by a sputtering method,

rotating the magnet with the electrode wire as a rotation shaft,

allowing the fine particles to fly three-dimensionally and deposit to form uniform film onto the whole or part of the surface of the magnet,

allowing the ~~fine particles~~ film to diffuse and permeate from the surface of the magnet to the inside of the magnet to at least a depth corresponding to a radius of a grain exposed on the outermost surface of the magnet, and thereby improving the quality of the damaged magnet surface a portion so that the magnetic characteristic $(BH)_{max}$ is recovered to 280 kJ/m^3 or more.

4. (Currently amended): A method of manufacturing a rare earth permanent magnet as set forth in claim 3, wherein the step of allowing the fine particles to fly and deposit is carried out at the same time as the step of allowing the ~~fine particles~~ film to diffuse and permeate the magnet.

5-8. (Canceled)

9. (Currently amended): A method of manufacturing a small rare earth permanent magnet comprising the steps of:

forming a cylindrical or disc-shaped rare earth magnet with a hole forming an inner surface or a cylindrical or prismatic rare earth magnet with no hole, wherein the magnet has a

surface to volume ratio of 2 mm^{-1} or more and a volume of 100 mm^3 or less, the forming step being accomplished by applying mechanical processing to a sintered Nd-Fe-B system or Pr-Fe-B system rare earth magnet block material, thereby damaging the surface of the magnet and causing a magnetic characteristic $(BH)_{max}$ of the magnet to deteriorate, packing

loading [[a]] the magnet in a wire basket to be freely tumbled,

placing the wire basket ~~between oppositely disposed targets~~ in a depressurized tank,

vaporizing an R metal (R denotes at least one kind of rare earth elements selected from the group consisting of Y, Nd, Dy, Pr, Ho and Tb) or an alloy containing an R metal in the depressurized tank by physical means,

allowing the R-metal vapour to fly three-dimensionally and deposit to form uniform film onto the whole or part of the surface of the magnet ~~and causing deposition of the vapor there~~,

allowing the ~~R-metal vapor~~ film to diffuse and permeate from the surface of the magnet to the inside of the magnet to at least a depth corresponding to a radius of a grain exposed on the outermost surface of the magnet, and thereby improving the quality of the damaged magnet surface portion so that the magnetic characteristic $(BH)_{max}$ is recovered to 280 kJ/m^3 or more.

10. (Currently amended): A method of manufacturing rare earth permanent magnet as set forth in claim 9, wherein the step of allowing the R-metal vapour to fly and deposit the fine particles and causing them to be deposited on the magnet is carried out at the same time as the step of allowing the ~~fine particles~~ film to diffuse and permeate the magnet.

11. (Currently amended): A method of manufacturing a rare earth permanent magnet as set forth in claim 3, wherein the step of allowing the ~~vapor~~ film to diffuse and permeate the magnet is effected while a concentration of impurity gases from the air contained in the ambient atmosphere is reduced to 50 ppm or less.

12. (Currently amended): A method of manufacturing a rare earth permanent magnet as set forth in claim 3, wherein ~~the magnet is an Nd-Fe-B system or Pr-Fe-B system magnet and~~ the R metal is Dy or Tb.

13. (Currently amended): A method of manufacturing a rare earth permanent magnet as set forth in claim 9, wherein the step of allowing the ~~vapor~~ film to diffuse and permeate the magnet is effected while a concentration of impurity gases from the air contained in the ambient atmosphere is reduced to 50 ppm or less.

14. (Currently amended): A method of manufacturing a rare earth permanent magnet as set forth in claim 9, wherein ~~the magnet is an Nd-Fe-B system or Pr-Fe-B system magnet and~~ the R metal is Dy or Tb.

15-16. (Canceled)